



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Hsin Hsin Chou, et al. Examiner: S. S. Y. Lee
Serial No. 10/749,868 Group Art Unit: 2852
Filed: December 31, 2003 Docket No. 456.03.124US1
Title: SYSTEM AND METHOD FOR MEASURING CHARGE/MASS AND
LIQUID TONER CONDUCTIVITY COMPTemporaneously


MAIL STOP ISSUE FEE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

- ☒ Form PTOL-85B, plus one copy
- ☒ Communication Re: Issue Fee Transmittal, with Authorization for Fee
- ☒ Copy of Notice of Allowance and Issue Fee Due,
- ☒ Notice of Allowability and Examiner's Amendment (4 pages)
- ☒ Determination of Patent Term Adjustment
- ☒ Transmittal Sheet
- ☒ Return postcard


Please consider this a PETITION FOR EXTENSION OF TIME for sufficient number of months to enter these papers if an additional extension of time is deemed necessary by the Office. Authorization is hereby given to charge Deposit Account Number 50-1391 if such additional extension is necessary.

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By: 
Atty: Mark A. Litman
Reg. No. 26,390

CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described herein, are being deposited in the United States Postal Service, as first class mail, with sufficient postage, in an envelope addressed to: Mail Stop Issue Fee, Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450 on 13 June 2006.

Mark A. Litman
Name


Signature



Notice of Allowability

Application No.

10/749,868

Examiner

Susan S. Lee

Applicant(s)

CHOU ET AL.

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 12/27/05.
2. ☒ The allowed claim(s) is/are 2-16.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

As to claim 2, page 3 of the claim, in the table defining $f(t)$, change

" $f(t) = e^{2at/\tau} - 1) / (e^{2at/\tau} + 1)$ " to

-- $f(t) = (e^{2at/\tau} - 1) / (e^{2at/\tau} + 1)$ -- as obviously intended.

As to claim 2, page 3 of the claim, in the table defining $f'(t)$, change

" $f'(t) = a/\tau)(1 - f^2(t))$ " to

-- $f'(t) = (a/\tau)(1 - f^2(t))$ -- as obviously intended.

As to claim 9, line 3, change "the toner particles" to -- toner particles --.

As to claim 10, line 3, change "the toner particles" to -- toner particles --.

The following is an examiner's statement of reasons for allowance:

The primary reason for allowance of claims 2-6 is the inclusion of determining conductivity and charge per mass includes determining toner particle current according to $i = i_1 + i_2$ to the relationships as defined in claim 2 where $i_1 = af'(t)$ and $i_2 = i_0 \exp(-t/\tau_2)$. i_1 is toner particle current; a is square root of $a^2 = 2\epsilon\zeta A^2 V_0$; $f'(t)$ is $(a/\tau)(1 - f^2(t))$; i_0 is initial impurity current; t is time; τ_2 is the impurity migration time constant; 2ϵ is two

Art Unit: 2852

times the dielectric constant of the toner ink/paste; ζ is toner charge density; A^2 is the area of the plate, squared; V_0 is applied voltage; $\tau = (R + R_2)(2\epsilon\zeta A^2)$; $R = d/\sigma A$; d is separation between the plates/distance; σ is conductivity of the ink/paste; A is the area of the plate; R_2 is the resistance of resistor R_2 ; $f(t) = (e^{2aV\tau} - 1) / (e^{2aV\tau} + 1)$; $f(t)$ is a function of time; and e is natural logarithm. This is found in all of claims 2-6, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claims 7-10, 15 and 16 is the inclusion of a method of measuring conductivity of a liquid or paste electrophotographic toner having the steps of adjusting the data to remove current contributions attributable to impurity ions; sending the adjusted data to a processor; and determining the conductivity from the adjusted data. This is found in all of claims 7-10, 15, and 16 but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claims 11-14 is the inclusion of an apparatus for measuring conductivity of a liquid or paste toner having the steps of a processor with analytic capability for adjusting the data to relating to current to remove contributions to the data attributable to impurity ions. This is found in all of claims 11-14, but not disclosed nor suggested by the prior art of record.

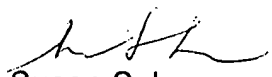
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2852

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan S. Lee whose telephone number is 571-272-2137. The examiner can normally be reached on Mon. - Fri., 10:30-8:00, Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Art Grimley can be reached on 571-272-2136 or 571-272-2800 (Ext. 52). The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Susan S. Lee
Primary Examiner
Art Unit 2852

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